



Figure 3. Great Philosophers Central Closeness via Spiral Graph – Zoom In

This fact strengthens the value of the citation analysis and network visualization methods, and the value of the Google Books repository as a corpora source.

Specifically, the project shed light on the central role of some of the philosophers (Plato, Aristotle, Augustine, Thomas Aquinas, Kant, Hegel, Rousseau, and Voltaire). The centrality of Voltaire and Rousseau is a novel result of this research.

There is still work to do in analyzing references between specific pairs of philosophers. Philosophers can be organized in clusters to find sub-groups with a higher internal level of reference. A deeper analysis of the references could help to identify patterns of ideas and concepts.

As of today, the majority of online eText resources are locked behind usernames and passwords by universities and other research institutes, although most of them are funded by the public. Google Books is one of the first examples, and the most significant and practical one for now, of open access. I hope this situation is going to change soon, by opening more and more online resources for the benefit of all.

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Prudential-Empirical Ethics of Technology (PEET) – An Early Outline

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1. Introduction

The pace of technological innovation and its prevalence in modern life leaves little reason to doubt that technology has had a profound impact on our well-being. Computers in the workplace reduce the number of challenging activities that require skill, which turns working life into nothing but a means to other ends. The same goes for technologies that allow us to passively absorb entertainment, which for many people constitute the default option when returning from an apathetic or anxiety-ridden day at work (Csikszentmihalyi 1991, 69). With both work and leisure activities being increasingly intertwined with (computer) technology and our volitional activities being the only way to transcend the well-being set-point that our genetic dispositions and circumstances determine (Lyubomirsky, Sheldon, and Schkade 2005), one way to better understand and potentially improve people's well-being in both domains is to investigate how and when technology tends to improve or worsen our well-being. In this outline I will present an approach, currently in its early stages of development, which analyzes technologies according to their positive or negative effects on well-being, and grounds these prudential considerations in empirical research—while at the same time subjecting this evaluation to ethical scrutiny. To clarify what this involves, I will proceed by explaining each of the four elements of the approach ("prudential," "empirical," "ethics," and "technology") before pulling the strings together and discussing the pros, cons, and limitations of this approach.

2. Prudential...

The realization that technology can drastically change our lives even if there is no wrongdoing involved has led to what we may term an "axiological turn" in ethics of technology (Brey 2006; Brey, Briggie, and Spence, forthcoming; Higgs, Light, and Strong 2000; Søraker 2010). This is a natural consequence of the realization that technologies can change our lives radically

without there being any right- or wrongdoing involved. Few technologies have changed our daily lives as much as the television, but it seems pointless to try to point fingers at someone to be blamed for this effect. This means that when evaluating technologies where no direct wrongdoing is involved, the traditional way of applying ethical theories also becomes insufficient. As a complement to considering the ethical, societal, and political implications of technology, the axiological turn asks us to also consider the *prudential effects*.

The term “prudential” (or “prudential value”) refers to something that is valuable *for* someone, contrasted with something that may be good in itself (if there is such a thing) or something that is good for something (which would typically be an instrumental value). To take an example, the *Mona Lisa* may have a certain aesthetic value in itself, it may have a certain instrumental value in virtue of its value for something else (e.g., for the *Musée du Louvre*, for the French republic, for the Italian sense of pride, etc.)—but it also has a certain *prudential* value in virtue of being good *for* some individual human beings. If something is good *for you* without being merely instrumentally good, then we are talking about how that thing contributes to your well-being. This is the sense in which I use the term “prudential” for present purposes.

This immediately raises the question of what it really means for something to be good for someone. This is a long-standing debate that cannot be fully accounted for within the scope of this paper, but one of the main dividing lines lies between objective and subjective accounts. Briefly put, objective accounts of the good life prescribe one or more “goods” that must be present for someone to genuinely have a good life—such as the necessity of friendship as expressed in Aristotle’s *Nicomachian Ethics* (book VIII, 1). Unlike subjectivist accounts, objectivist theories of the good life can make the claim that one who experiences one’s life as good may be completely wrong about this, and that the good life does not have to be *experienced* as such. Subjectivist accounts, on the other hand, prioritizes first-person, subjective experience; thus, a life that is experienced as good is *ipso facto* a good life (although there will typically be a few additional conditions that have to be met, such as being sufficiently informed, capable, and rational).

The advantage to objective accounts is that they can more substantially claim that one has deluded oneself into an existence that may appear to be a good life, but which in reality cannot be a good life—thereby accounting for the ways in which delusion, confabulation, and various forms of mental illness may hinder us from understanding what is good for us. The advantage of the subjective accounts lies in taking the individual seriously, and allowing for a plurality of ways in which to attain well-being. As Griffin aptly puts it: “To get an account of well-being that would be of use in moral theory we have to move . . . on to what is valuable to the particular person affected in each case we judge” (Griffin 1998, 72). I have argued this point at length elsewhere (Søraker 2010), but there is a need to find a golden mean between these positions—a golden mean between staunch paternalism (*you are wrong about what is good for you*) and complete relativism (*anything goes*). I think we can find such a golden mean in the notion of “recommendations,” which may be of the form: *This tends to increase the subjective well-being for most people, so it might be worth trying*. Admittedly, this leaves the notion of well-being a contingent one, but we can still add substance to it by grounding these recommendations in empirical research (in addition to ethical considerations, which I will return to later).

3. ... Empirical ...

Within the aforementioned axiological turn, a technology is typically assessed according to its agreement with a

philosophical theory of the good life. For instance, it has been argued that relationships in virtual worlds cannot meet the Aristotelian criteria for being the kind of relationship that contributes to the good life (Fröding and Peterson, forthcoming), and that technology-driven consumerism threatens non-material and non-hedonistic values (Brey 2007). Although these analyses may be instructive, there is often a lack of attention to whether the applied theories are actually true. If a technology fails to meet certain philosophical conditions for a good life, it is typically left as an open question whether those philosophical conditions in reality lead to better lives—was Aristotle really correct when claiming that genuine friendship is necessary for a good life, and do material and hedonistic values really make us unhappier? Together with numerous other problems with applying philosophical theories of the good life to technology assessment—including naturalistic fallacies, intuition pumps, and imprecise terminology¹—a more substantial way to ground the analysis is to consider empirical research on what *actually* tends to increase or decrease our well-being. This does presuppose a subjectivist account of well-being, since this empirical research is typically based on self-reports, but it allows us to provide recommendations grounded in concrete activities that have a strong tendency to increase most people’s well-being (more on this later).

In his 1998 inaugural address, former president of the American Psychology Association Michael Seligman argued that psychology should not only be a science of negative mental health—explaining, predicting, and curing mental illness—but also a science of *positive* mental health: explaining, predicting, and enabling *well-being*. Seligman thereby founded “positive psychology,” which is the empirical study of the kinds of events and experiences that tend to lead to well-being and what can be done to improve it. This field has grown tremendously since then, with its own conferences, journals, and graduate programs throughout the world.

Although controversial and fraught with methodological and conceptual problems, one of positive psychology’s advantages is that it pays tremendous attention to these problems, resulting in a level of self-scrutiny unparalleled by many other empirical disciplines (cf. Lopez and Snyder 2003; Ong and Van Dulmen 2007; Peterson 2006). Although findings are typically based on self-reports, whether in real-time (“What are you doing right now, and what is your level of well-being?”) or in retrospect (“Overall, how satisfied are you with your life?”), increased validity is sought by means of extensive meta-studies, correlations with other statistics, neuroscientific and evolutionary explanations, as well as trying to control for cognitive biases. At the end of the day, “subjective well-being” remains an operational term, and it can be questioned whether this actually corresponds to a deep philosophical notion of the good life. Nevertheless, it is the most concrete, substantial, a posteriori account of which events and activities that tend to make people happy we have, and the methodological challenges should simply be a reminder not to apply these findings *blindly*.

One discovery is that we have a “set point” which partly determines how happy we can be, but an equally consistent finding is that there are still numerous “volitional activities” that can bring us up to or beyond our set-point of well-being (cf. Lyubomirsky et al. 2005; Peterson 2006). After some ten years of intensive research, a scientific picture of human well-being is starting to emerge, constituted by a large body of empirical findings that has largely been left untapped in ethics of technology. Many of these findings can be “translated” to concrete technological features, as I will return to below, but we cannot do so with the purpose of achieving a quick fix

of happiness. Given the methodological challenges and the somewhat controversial practice of quantifying well-being, we need to bring ethics into the approach.

4. ... Ethics ...

Rather than drawing the notion of well-being from philosophy, as most other similar approaches do, PEET draws the *responsible application* of these findings from philosophy. As I will illustrate by way of examples below, most of the events and experiences that have been shown to increase well-being can often come with negative effects as well, either due to having multiple effects on well-being or due to introducing side effects that are undesirable for other ethical, cultural, or political reasons. Most fundamentally, something being good for me may, of course, be impermissible because it is not good for others. If we design technology solely according to what is directly beneficial for the users' well-being, we might lose sight of any negative effects the same technology may have—not only on the users (which I will return to in the next section) but also unintended side-effects on other users. For instance, it has repeatedly been shown that acts of kindness increase one's own well-being (Lyubomirsky et al. 2005; Otake, Shimai, Tanaka-Matsumi, Otsui, and Fredrickson 2006), but since positive psychology is primarily concerned with subjective experiences, the same effect can be achieved from the mere *illusion* that one does acts of kindness. To illustrate, we can imagine an immersive virtual environment where *simulated* acts of kindness give rise to increased well-being, when those acts in reality have no effect on the actual world at all. Indeed, "liking" a cause or charity on Facebook may give us such an illusory feeling that we are being altruistic, when the action in reality has little if any effect. This could provide the user with increased well-being, but it might make us less inclined to act similarly in the actual world. Likewise, well-being gained from being social in virtual worlds could leave us with a society where there is less and less need to meet others in the flesh, with all the ethical, political, and cultural ramifications that may have.

This may sound like a purely utilitarian deliberation, weighing the positive consequences for myself against the negative consequences for others, but this is where it is important to distinguish between prudential and ethical value. Separating between prudential and ethical value allows us to operate with subjective criteria for the former, while including objective criteria for the latter. For instance, we can invoke the categorical imperative on the ethics side, and disallow an activity that entails using a person as a mere means towards this end, regardless of how beneficial it may be for subjective well-being. The prudential considerations can also be complemented with virtue ethics, for instance, by arguing that a flow-inducing activity is in disagreement with what it means to be a virtuous person. In short, even if PEET emphasizes the importance of applying empirical findings in a responsible manner, it leaves it open which ethical theory to "plug in." A utilitarian can simply enrich her utilitarian calculus with empirical findings, a Kantian can use empirical research to evaluate (only) that which is morally permissible, and a virtue ethicist can forbid any beneficial activity that is inconsistent with what it means to be a virtuous person. Furthermore, the analysis can (and should) be augmented by political and cultural considerations, such as whether a prudentially good activity could be detrimental to democratic ideals, lead to social unrest, or threaten cultural norms and values.

5. ... of Technology

Despite all the advances in positive psychology and related fields, and the clear causality between technology and well-being, surprisingly few of these researchers have directly investigated how concrete technologies influence

our subjective well-being. The variables emphasized by the researchers typically relate to general human characteristics, such as age, gender, and income—or to events and experiences that do not *directly* involve technology, such as the effect of engaging in skill-demanding activities (Csikszentmihalyi 1997; Nakamura and Csikszentmihalyi 2009; Seligman 2002), belonging to a community (Demir and Weitekamp 2007; Okun, Stock, Haring, and Witter 1984), perceived meaningfulness (Peterson, Park, and Seligman 2005; Seligman 2002; Wong and Fry 1998), autonomy (Reis, Sheldon, Gable, Roscoe, and Ryan 2000), physical health (Zutra and Hempel 1984), and various forms of sensory pleasure (Kubovy 1999; Reber, Schwarz, and Winkielman 2004; Seligman 2002). Thus, one major challenge lies in translating from empirical findings to concrete technological features.

The first step requires careful attention to the research design and methodology. On the one hand, the empirical findings need to be scrutinized in order to narrow down, as far as possible, precisely what is being measured. The digest version of these findings will often state something like "being social makes you happy," but we need to look into the actual research design and the methods employed in order to see what "being social" actually entails in these cases. For instance, whether the findings are relevant for the value of being social in virtual worlds depends on whether the sociality in question required physical proximity. When the conditions for the positive effect have been identified, the next step is to translate these to concrete technological features—quite often in the form of specific types of interaction. This is probably best illustrated with an example.

"Flow" is a state of mind that has been found to have a profound and lasting boost to well-being (Csikszentmihalyi 1997; Seligman 2002). It is achieved when we are engaged in activities that are challenging and we have the skills to master the challenge. For this to occur, it must be possible to control the difficulty level in order to avoid that it is no longer challenging when we reach a certain skill level while at the same time be manageable when still a beginner. It must also be something to which you can dedicate your whole attention without distraction, and that provides clear and immediate feedback on how well you are doing. Typical examples include the mastery of sports, musical instruments, or hobbies like gardening, dancing, or singing in a choir. If we want to translate this into technological features, the requirements map perfectly onto computer games as an ideal source of flow—when it comes to difficulty settings, immediate feedback, and attentiveness. This is indeed one of the few technologies that have been studied empirically, and the evidence suggests that computer games do have a range of beneficial effects (Baranowski, Buday, Thompson, and Baranowski 2008).

Despite the strong evidence that flow is beneficial for well-being and computer games being ideal sources of flow, this does not mean that computer games are the perfect source of increasing well-being. One problem with translating empirical findings to technological features lies in the fact that the same features may also have negative effects, by themselves or because they necessitate certain other features. The same features that give rise to flow can also give rise to addiction, which is clearly detrimental to well-being. They also necessitate particular practices, such as (in most cases) staying at home in front of a computer screen, which may lead to social isolation—one of the clearest indicators of *reduced* well-being (Demir and Weitekamp 2007; Okun et al. 1984). The same practice could also lead to deterioration of health, another threat to well-being. Rather than simply concluding that computer games are therefore to be avoided, we can use this constructively

instead. For instance, the right question to ask is whether the technology can be modified so that it maintains the flow-capability, yet requires us to simultaneously be social. Gaming technologies like *Kinect*, *Wii*, and *Rock Band* implicitly follow this principle insofar as they require the users to cooperate in physical proximity and this cooperation heightens the sense of flow. This illustrates how the translation between empirical findings and technological features is difficult, and requires us to scrutinize which features are necessary and/or sufficient for the positive effect to occur, whether the same features may be detrimental in some other respect, and whether any such detrimental effects can be remedied by adding, modifying, or removing technological features.

6. Putting it all together: Prudential-Empirical Ethics of Technology

Summing PEET up in one phrase: *The purpose of Prudential-Empirical Ethics of Technology is to, retroactively or proactively, evaluate the impact particular technologies have on their users' and secondary stakeholders' well-being by carefully translating between empirical research on subjective well-being and concrete technological features, and as restricted by ethical, political, and cultural concerns.*

The approach can be summarized as the following step-by-step procedure (although this glosses over many of the nuances involved):

- 1) Start with empirical findings that identify concrete events or experiences that tend to increase or decrease subjective well-being. Critically evaluate their validity (Is it statistically significant, validated by independent researchers, what is actually being measured and by which method, are the results congruent with other findings, etc.?)
- 2) If found to be valid and significant, carefully investigate how the empirical findings can be translated into concrete, technological features.
- 3) Consider whether the technological features identified above come with other side effects.
- 4) Consider whether there are ethical, political, or social values that go against using a technology to increase well-being, for instance, due to non-consequentialist duties and responsibilities, political justice, or cultural values.

Although this is just a preliminary and general sketch, I believe that a procedure along those lines is necessary in order to arrive at an empirically grounded yet value-sensitive and socially responsible assessment. In the order outlined above, the steps lead to a foundation for developing new technologies. If the purpose is to evaluate *existing* technologies and their potential impact on well-being, steps 1 and 2 should be reversed and the first step then consists in comparing concrete, technological features with existing empirical results.

The steps, although encompassing a number of issues that require more careful elaboration, serve to illustrate how a robust analysis of the relation between technology and well-being is inherently interdisciplinary. Although psychological research constitutes the empirical grounding, careful attention to ethics and other values is also needed to avoid easy technological fixes to what may be deep-rooted ethical, social, or political problems. The key to approaching such issues is to find an appropriate balance between self-interest (well-being) and other-interest (ethics, politics, and other values), and this is why this project must include both empirical research and philosophy.

7. Advantages, Problems, and Challenges

The advantage with this method lies in the ability to provide

concrete and grounded *recommendations*, thereby avoiding both relativist and paternalist extremes. It is also possible to use this approach with varying levels of refinement, depending on whether it is intended to inspire engineers, inform the public, report to policy makers, or form part of more foundational academic analysis.

As the reader surely has picked up, there are still many challenges and problems facing this approach. First, it rests on a subjectivist notion of well-being that prioritizes first-person experiences. This requires solid justification, and is perhaps the most controversial presupposition from a philosophical standpoint.² Closely related, it also presupposes that empirical research can have philosophical implications, a presupposition that has not gone unchallenged (Feldman 2010).

Second, it can be fiendishly difficult to translate between empirical findings and technological features, in order to safeguard that a non-technological activity retains its beneficial effects when instantiated in a technology. Abstract terms like “being social” and “acts of kindness” are complex, and it will often be challenging to find concrete technological features that give similar positive results.

A third problem concerns the ethical, political, and cultural considerations, where there is clearly a wide range of choices that will determine how often well-being concerns are overridden by other concerns. This is not a problem unique to this approach, however, as most technology assessments presuppose some ethical, political, and/or cultural framework. It can also be seen as an advantage, since it means that the well-being component can be combined with one’s favorite ethical theory without losing the important considerations stemming from the former. Indeed, this approach may be particularly helpful combined with a deontological ethics, since the latter typically gives little guidance when it comes to that which is morally permissible.

Last but not least, it is difficult to find an appropriate balance between applicability and robustness. It aims to be an all-things-considered approach, but the range of things to consider must be balanced against the applicability of the approach—in particular how well it can be appropriated by engineers and policy makers themselves. I plan to develop both a condensed and comprehensive version of PEET, so that the range of necessary considerations is determined by the purpose and target group of the analysis.

8. Concluding Remarks

PEET aims to further the axiological turn by combining the normative, evaluative work that is the hallmark of philosophy and ethics, while using psychological research to empirically ground prudential claims so as to avoid armchair speculation. To avoid any misunderstandings as to the scope of this approach, it should be emphasized that this is not an approach that rivals any other approaches and it is intended to form a complementary form of technology assessment. I am not arguing that we should stop considering issues of right and wrong, but that we should complement such analysis with prudential considerations, and that this should be grounded in empirical research. Allow me to again emphasize that “ethics” is still an integral part of the approach, and that a subjective account of well-being can and (in my view) should be combined with an objective account of ethics, to allow for ethical concerns to override any positive effects on well-being.

I have already presented the approach to numerous engineers, computer science graduates in particular, and I often receive feedback that the approach is, above all, a good source of inspiration for creating novel and creative solutions. This gives me hope that PEET can become an important addition to the ethicist, policy maker, or engineer’s toolbox. The result will be

a holistic, ethical, and concrete theory of the role different types of technology ought to have in our lives, of the steps needed to make such an assessment—a framework that presents normative guidelines for engineers, designers, policymakers, parents, caregivers, and others concerned with how technology may or may not contribute to a good life. I have only recently been able to start developing this approach, and I would be very grateful for any criticism and constructive suggestions. At the very least, I hope that this preliminary and cursory overview is sufficient to convey its potential advantage and utility, and to start a fruitful discussion on the role of prudential value and empirical research in ethics of technology.

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Endnotes

1. Again, there is no room for a full critique in this paper, nor is that my main purpose, but I discuss this in more detail in Søraker 2010.
2. Although a full defence is beyond the scope of this paper, I presuppose a variant of Fred Feldman's "Intrinsic Attitudinal Hedonism," but one that is "confidence-adjusted" rather than "truth-adjusted." I defend this approach in Søraker 2010, and more systematically in a forthcoming publication.

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“Friend” Is a Verb

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People linked together by friendship, affection, or physical love found themselves reduced to hunting for tokens of their past communion within the compass of a ten-word telegram. And since, in practice, the phrases one can use in a telegram are quickly exhausted, long lives passed side by side, or passionate yearnings, soon declined to the exchange of such trite formulas as: “Am well. Always thinking of you. Love.”

—*The Plague*, Albert Camus (1991, 69)

In the situation described in this passage, surely much of the problem follows from the very short form of the communication possible. Twitter exchanges seem luxurious, indulgent by comparison. But surely much of the problem follows from the format, regardless of length. “Mutual sympathy” is equated here with “flesh and heart,” and surely we today agree with Camus that there is a kind of intimacy and connection far easier to establish in face-to-face interaction, or, more accurately, body-to-body interaction (Fortunati 2005, 53), than in writing, no matter whether that writing is limited to ten words. And yet, while the centrality of co-presence and body-to-body interaction might be of unquestionably central concern to erotic relationships, it is far less clear that it should be crucial to friendship. Why, exactly, does writing seem to us to be such a poor substitute for physically co-present interaction within the realm of friendship as well?